Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A fabricated biofilm storage device for long term storage of ~~biological~~ material comprising:

optionally, a substrate having a contacting surface, and

a biologic material on the optional contacting surface and forming a stable film, wherein the film is stable at room temperature for at least 7 weeks.

2. (Currently Amended) The fabricated biofilm storage device of claim 1, wherein the stable film is stable for at least five months based on time dependent infection ability of the biologic material in the film state.

3. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the stable film is stable at room temperature for at least six months.

4. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the substrate is present and chosen from the group consisting of Langmuir-Blodgett films, functionalized glass, germanium, silicon, a semiconductor material, PTFE, polycarbonate, mica, mylar, protein film, plastic, quartz,

polystyrene, gallium arsenide, gold, silver, metal, metal alloy, fabric, mammalian tissue, and combinations thereof.

5. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the stable film is dry.

6. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the stable film is self-supporting.

7. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the stable film comprises, in addition to the biological material, one or more organic or inorganic molecules.

8. (Previously Presented) The fabricated biofilm storage device of claim 7, wherein an organic molecule is present and is chosen from the group consisting of carbon, single stranded nucleic acid, double stranded nucleic acid, peptide, protein, antibody, enzyme, steroid, drug, chromophore, conducting polymer, vaccine, and combinations, thereof.

9. (Previously Presented) The fabricated biofilm storage device of claim 7, wherein an organic molecule is present and is chosen from the group consisting of protein, enzyme, drug, and combinations thereof.

10. (Previously Presented) The fabricated biofilm storage device of claim 7, wherein an inorganic molecule is present and is chosen from the group consisting of indium tin oxide, a doping agent, metal, metal alloy, mineral, semiconductor, and combinations thereof.

11. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the biologic material is chosen from the group consisting of a virus, bacteriophage, bacteria, peptide, protein, antibody, enzyme, amino acid, steroid, drug, carbohydrate, lipid, chromophore, single-stranded or double-stranded nucleic acid, vaccine, and chemical modifications thereof.

12. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the biological material is a virus or bacteriophage.

13. (Previously Presented) The fabricated biofilm storage device of wherein the biological material is a bacteria.

14. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the biological material is a peptide or protein.

15. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the biological material is an antibody or enzyme.

16. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the biologic material self-assembles to form a uniform thin film.

17. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the biological material is anisotropic.

18. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the biological material further comprises a vaccine.

19. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein at least two biological materials are present.

20. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the biological material further comprises an inorganic nanoparticle.

21. (Previously Presented) The fabricated biofilm storage device of claim 7, wherein the one or more organic or inorganic molecules are preincubated with the biologic material.

22. (Previously Presented) The fabricated biofilm storage device of claim 21, wherein preincubation permits the formation of nanocrystals.

23. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the film exhibits biologic, optical, electrical, magnetic properties, or combinations thereof.

24. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the stable film is used in diagnosis, screening, analysis, testing, information gathering,

data processing, drug discovery, microelectronics, optics, data storage, research, or combinations thereof.

25. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the structure of the stable film is controlled by solvent concentration, magnetic field, electric field, optics, and combinations, thereof.

26. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the biologic material is genetically engineered.

27. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the biofilm is stabilized with the addition of a storage solution.

28. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the biofilm is stabilized with the addition of a sugar-containing storage solution.

29. (Previously Presented) The fabricated biofilm storage device of claim 1, wherein the stability is monitored with use of light properties.

30. (Previously Presented) A method of fabricating a biofilm storage device comprising the steps of:

applying a biologic material to a substrate with a contacting surface, wherein optionally the contacting surface promotes uniform alignment of the biologic material on the contacting surface; and

allowing the formation of a stable film which is stable at room temperature for at least seven weeks.

31. (Previously Presented) The method of claim 30, wherein the stable film is dry.

32. (Previously Presented) The method of claim 30, wherein the biological material is a combinatorial library.

33. (Previously Presented) The method of claim 30, wherein the biologic material self assembles to form a thin film about 25 microns or less.

34. (Previously Presented) The method of claim 30, wherein uniform alignment is controlled by solvent concentration, magnetic field, electric field, optics, or combinations, thereof.

35. (Previously Presented) The method of claim 30, wherein fabricating the biofilm storage device is reversible.

36. (Previously Presented) The method of claim 30, wherein the biologic material is chosen from the group consisting of a virus, bacteriophage, bacteria, peptide, protein, antibody, enzyme, amino acid, steroid, drug, carbohydrate, lipid, chromophore, single-stranded or double-stranded nucleic acid, vaccine, and chemical modifications thereof.

37. (Previously Presented) The method of claim 30, wherein the biological material is a virus or bacteriophage.

38. (Previously Presented) The method of claim 30, wherein the biological material is an anisotropic particle.

39. (Previously Presented) The method of claim 30, wherein the biological material is a bacteria.

40. (Previously Presented) The method of claim 30, wherein the biological material is a peptide or protein.

41. (Previously Presented) The method of claim 30, wherein at least two biological materials are applied.

42. (Previously Presented) The method of claim 30, wherein the biological material is an antibody or enzyme.

43. (Previously Presented) The method of claim 30, wherein the biologic material is layered with an organic compound, inorganic compound, and combinations thereof.

44. (Previously Presented) The method of claim 30, further comprising the step of applying a storage solution prior to allowing the formation of a stable film.

45. (Previously Presented) The method of claim 30, further comprising the step of applying a sugar-containing storage solution prior to allowing the formation of a stable film.

46. (Previously Presented) A kit for fabricating a biofilm storage device comprising:

a container; and

a storage film comprising a biologic material which is stable at room temperature for at least 7 weeks.

47. (Previously Presented) The kit of claim 46, further comprising a storage solution to be applied to the film.

48. (Previously Presented) The kit of claim 46, further comprising a sugar-containing storage solution to be applied to the film.

49. (Previously Presented) The kit of claim 46, further comprising a solvent that promotes film formation.

50. (Previously Presented) The kit of claim 46, wherein the thin film stores high-density information at room temperature.

51. (Previously Presented) The kit of claim 50, wherein the high density information is used in diagnosis, screening, analysis, testing, information gathering, data processing, microelectronics, optics, research, or combinations, thereof.

52. (Previously Presented) The kit of claim 50, wherein the high-density information is stable and chosen from the group consisting of biologic, optical, electrical, magnetic, or combinations, thereof.

53. (Previously Presented) A hybrid fabricated film storage device comprising:
a substrate comprising a surface; and

a biologic material applied to the surface to form a biologically stable thin film, wherein the film further comprises an inorganic material.

54. (Previously Presented) The hybrid fabricated film storage device of claim 53, wherein the substrate is further chosen from the group consisting of Langmuir-Bodgett films, functionalized glass, germanium, silicon, a semiconductor material, PTFE, polycarbonate, mica, mylar, plastic, quartz, polystyrene, gallium arsenide, gold, silver, metal, metal alloy, synthetic fabric, and combinations thereof.

55. (Previously Presented) The hybrid fabricated film storage device of claim 53, wherein the biologically stable thin film is dry.

56. (Previously Presented) The hybrid fabricated film storage device of claim 53, the substrate further comprises a thin layer which contacts the film of biological material.

57. (Previously Presented) The hybrid fabricated film storage device of claim 53, wherein film further comprises one or more organic molecules chosen from the group consisting of carbon, single stranded nucleic acid, double stranded nucleic acid, peptide, protein, antibody, enzyme, steroid, drug, chromophore, conducting polymer, or combinations, thereof.

59. (Previously Presented) The hybrid fabricated film storage device of claim 53, wherein the inorganic material is chosen from the group

consisting of indium tin oxide, a doping agent, metal, metal alloy, mineral, or combinations, thereof.

59. (Previously Presented) The hybrid fabricated film storage device of claim 53, wherein the one or more organic or inorganic molecules are preincubated with the biologic material.

60. (Previously Presented) The hybrid fabricated film storage device of claim 59, wherein preincubation permits the formation of nanocrystals.

61. (Previously Presented) The hybrid fabricated film storage device of claim 56, wherein the biologic material is chosen from the group consisting of virus, bacteriophage, bacteria, peptide, protein, amino acid, steroid, drug, chromophore, single-stranded or double-stranded nucleic acid, vaccine, and chemical modifications thereof.

62. (Previously Presented) The device of claim 56, wherein the biological material is a virus.

63. (Previously Presented) The device of claim 56, wherein the biological material is a bacteriophage.

64. (Previously Presented) The device of claim 56, wherein the biological material is bacteria.

65. (Previously Presented) The device of claim 56, wherein the biological material is peptide or protein.

66. (Previously Presented) The device of claim 56, wherein the biological material is an antibody.

67. (Previously Presented) The hybrid fabricated film storage device of claim 56, wherein the biologic material self-assembles to form a uniform thin film.

68. (Previously Presented) The hybrid fabricated film storage device of claim 56, wherein the biologically stable thin film exhibits biologic, optical, electrical, and magnetic properties, or combinations thereof.

69. (Previously Presented) The hybrid fabricated film storage device of claim 56, wherein the biologically stable thin film is used in diagnosis, screening, analysis, testing, information gathering, data processing, drug discovery, microelectronics, data storage, research, or combinations thereof.

70. (Previously Presented) The hybrid fabricated film storage device of claim 56, wherein formation of the biologically stable thin film is controlled by solvent concentration, magnetic field, electric field, optics and combinations thereof.

71. (Previously Presented) The hybrid fabricated film storage device of claim 56, wherein the biologic material is genetically engineered.

72. (Previously Presented) The hybrid fabricated film storage device of claim 56, wherein the storage device is stabilized *by* applying a storage solution to the biologically stable thin film.

73. (Previously Presented) The hybrid fabricated film storage device of claim 56, wherein the storage device is stabilized by applying a sugar-containing storage solution to the biologically stable thin film.

74. (Previously Presented) A viral film fabricated for use as a storage device comprising phage particles in a stable film, wherein the film is stable at room temperature for at least 7 weeks.

75. (Previously Presented) The viral film of claim 74, wherein the stable film on the surface of a substrate.

76. (Previously Presented) The viral film of claim 74, wherein the stable film comprises phage particles of a phage display library.

77. (Previously Presented) The viral film of claim 74, wherein the film comprises micron scale repeating patterns that continue to the centimeter scale.

78. (Previously Presented) The viral film of claim 74, wherein the film comprises phage particles of a phage display library which preserves ability to infect.

79. (Previously Presented) The viral film of claim 74, wherein the film has a stable time-to-infection in terms of titer numbers for at least seven weeks.

80. (Previously Presented) The viral film of claim 74, wherein the film has a stable time-to-infection in terms of titer numbers for at least five months.

81. (Previously Presented) The viral film of claim 74, wherein the film retains its ability to be greater than 95% infectious for at least 5 months.

82. (Previously Presented) The viral film of claim 74, wherein the film stores high-density engineered DNA and protein information.

83. (Previously Presented) The viral film of claim 74, wherein the film is a thin film, having a thickness of about 25 microns or less.

84. (Previously Presented) The viral film of claim 74, wherein the film is a dry thin film.

85. (Previously Presented) The viral film of claim 74, wherein the film stores at least 4 X 101' phage per square centimeter.

86. (Previously Presented) The viral film of claim 74, further comprising inorganic materials in combination with the phage particles,

87. (Previously Presented) The viral film of claim 74, further comprising inorganic nanoparticles in combination with the phage particles.

88. (Previously Presented) The viral film of claim 74, wherein the phage particles are selected to provide for specific binding.

89. (Previously Presented) The viral film of claim 74, wherein the phage particles are selected to provide for specific binding to inorganic nanoparticles, and phage particles are bound to the inorganic nanoparticles.

90. (Previously Presented) The viral film of claim 74, wherein the film comprises phage particles of a phage display library, wherein the phage particles are selected to provide for specific binding to inorganic nanoparticles, and phage particles are bound to the inorganic nanoparticles.

91. (Previously Presented) The viral film of claim 74, wherein the film comprises phage particles of a phage display library, wherein the phage particles are selected to provide for specific binding to biological molecules, and phage particles are bound to the biological molecules.

92. (Previously Presented) The viral film according to claim 74, wherein the film has a stable time-to-infection in terms of titer numbers for at least seven weeks.

93. (Previously Presented) Use of the viral film of claim 74 as a storage device in drug discovery, in high throughput screening, or in diagnosis of one or more pathological conditions.

94. (Previously Presented) A method of forming a viral film comprising:

preparing a concentrated suspension of viral phage particles in a solvent;

removing solvent so that the phage particles form a film under conditions wherein the film is stable at room temperature for at least 7 weeks.

95. (Previously Presented) The method according to claim 94, wherein the suspension is a liquid crystalline suspension of viral phage particles in the solvent.

96. (Previously Presented) The method according to claim 94, wherein the substrate is a solid substrate.

97. (Previously Presented) The method according to claim 94, wherein the film comprises phage particles of a phage display library.

98. (Previously Presented) The method of claim 94, wherein the film comprises micron scale repeating patterns that continue to the centimeter scale.

99. (Previously Presented) The method of claim 94, wherein the film comprises phage particles of a phage display library which preserves ability to infect.

100. (Previously Presented) The method of claim 94, wherein the film has a stable time-to-infection in terms of titer numbers for at least seven weeks.

101. (Previously Presented) The method of claim 94, wherein the film has a stable time-to-infection in terms of titer numbers for at least five months.

102. (Previously Presented) The method of claim 94, wherein the film retains its ability to be greater than 95% infectious for at least 5 months.

103. (Previously Presented) The method of claim 94, wherein the film stores high-density engineered DNA and protein information,

104. (Previously Presented) The method of claim 94, wherein the film is a thin film.

105. (Previously Presented) The method of claim 94, wherein the film is a dry thin film.

106. (Previously Presented) The method of claim 94, wherein the film stores at least 4 X 10"3 phage per square centimeter.

107. (Previously Presented) The method of claim 94, wherein the film further comprises inorganic compounds in combination with the phage particles.

108. (Previously Presented) The method of claim 94, wherein the film further comprises inorganic nanoparticles in combination with the phage particles, and the film retains its ability to be greater than 95% infectious for at least 5 months.

109. (Previously Presented)The method of claim 94, wherein the phage particles are selected phage particles to provide for specific binding.

110. (Previously Presented) The method of claim 94, wherein the phage particles are selected phage particles to provide for specific binding to inorganic nanoparticles, and the phage particles are bound to the inorganic nanoparticles.

111. (Previously Presented) The method of claim 94, wherein the phage particles are selected phage particles to provide for specific binding to biological molecules, and the phage particles are bound to the biological molecules.

112. (Previously Presented) A self-supporting film for use as a storage device comprising one or more biological materials, wherein the film is stable for at least six months.

113. (Previously Presented) The film according to claim ill, wherein the one or more biological materials is self-assembled to form a thin film on the contacting surface of a substrate.

114. (Previously Presented) The film according to claim 111, wherein the film is liquid crystalline.

115. (Previously Presented) The film according to claim 111, wherein the biological material is a virus.

116. (Previously Presented) The film according to claim 111, wherein the biological material is a bacteriophage.

117. (Previously Presented) The film according to claim 111, wherein the biological material is an enzyme.

118. (Previously Presented) The film according to claim 111, wherein the biological material is a peptide or protein.

119. (Previously Presented) The film according to claim 111, wherein the film further comprises an inorganic nanoparticle.

120. (Previously Presented) The film according to claim 111, wherein the film further comprises an inorganic nanoparticle which is specifically bound to the biological material.

121. (Previously Presented) The film according to claim 111, wherein the biological material is a peptide.

122. (Previously Presented) A method for improving the stability and long term activity of a biofilm storage device comprising the step of including a storage solution in the

biofilm storage device which improves the stability and long term activity of the biofilm storage device.

123. (Previously Presented) The method according to claim 122, wherein the storage solution comprises sugar.

124. (Previously Presented) The method according to claim 122, wherein the storage device comprises an enzyme.

125. (Previously Presented) The method according to claim 122, wherein the storage devices comprises an enzyme and a virus.

126. (Previously Presented) A method to visualize the structure and function of a biological material used as a biofilm storage device, comprising the step of monitoring light properties of the biological material.

127. (Previously Presented) The method of claim 126, wherein the light-emitting molecule is a protein.

128. (Previously Presented) The method of claim 126, wherein the light properties are monitored by confocal microscopy.

129. (Previously Presented) The method of ~~claimi~~ claim 126, wherein the light-emitting molecules are fluorescent.

130. (Previously Presented) A method of forming viral thin films for a storage device which retain the ability of the viral particles to infect a bacterial host, comprising the step of removing solvent from a concentrated suspension of viral particles to

form the viral thin film on a substrate, wherein the viral particles retain infecting ability for a bacterial host based on measurement of titer numbers after at least seven weeks.

131. (Previously Presented) The method according to claim 130, wherein the infecting ability is based on measurement of titer numbers after at least five months.

132. (Previously Presented) The method according to claim 130, wherein the viral particles form epitaxial layer domains on the substrates

133. (Previously Presented) The method according to claim 130, wherein the thin film stores at least 4 X 1013 phage per square centimeter.

134. (Previously Presented) The method according to claim 130, wherein the thin film stores at least 7200 times 4 X 10i3 protein units per square centimeter.

135. (Previously Presented) The method according to claim 130, wherein the viral particles comprise a filamentous phage virus.

136. (Previously Presented) The method according to claim 130, wherein the particles before film formation comprise a genetically engineered phage library, and the library information is preserved in film form.

137. (Previously Presented) The method according to claim 130, wherein the viral particles are designed to provide the film with specific binding properties so that the film can be a storage device for input and output of information.

138. (Previously Presented) A storage device comprising liquid crystalline viral film comprising anisotropic viral particles which are the chiral smectic C phase.

139. (Previously Presented) The storage device according to claim 138, wherein the viral particles are a phage display library.

140. (Previously Presented) A storage device according to claim 138, wherein the viral particles are genetically engineered.

141. (Previously Presented) A storage device according to claim 138, wherein the viral particles are selected to specifically bind to an organic or inorganic compound.

142. (Previously Presented) A storage device according to claim 138, wherein the film has a thickness of about one micron to about 25 microns.

143. (Previously Presented) A storage device according to claim 138, wherein the film further comprises inorganic nanoparticles.

144. (Previously Presented) A storage device according to claim 138, wherein the film further comprises a stabilization agent.

145. (Previously Presented) A storage device according to claim 138, wherein the film further comprises a biomaterial.

146. (Previously Presented) A storage device according to claim 138, wherein the film further comprises a biomaterial and inorganic nanoparticles.

147. (Previously Presented) A method of making a storage device comprising the step of casting a film of viral particles under concentration conditions which provide for a chiral smectic C phase in the film.

148. (Currently Amended) The method ~~accecording~~ according to claim 147, wherein the concentration of viral particles is at least about 1 mg/mL.

149. (Currently Amended) The method according to claim 147, wherein the concentration of viral ~~partileles~~ particles is sufficiently high to provide a self-supporting film.

150. (Previously Presented) A storage device comprising a viral film which has been selected to bind streptavidin protein units.

151. (Previously Presented) The storage device according to claim 150, wherein the viral film further comprises metallic nanoparticles.

152. (Previously Presented) The storage device according to claim 150, wherein the viral film further comprises fluorescent molecules.

153. (Previously Presented) The storage device according to claim 150, wherein the viral film further comprises fluorescent protein.

154. (Previously Presented) The storage device according to claim 150, wherein the film is liquid crystalline.

155. (Previously Presented) The storage device according to claim 150, wherein the film further comprises a stabilization agent.

156. (Previously Presented) A method of forming a storage device comprising providing a phage display library and by panning to select phage which specifically bind to streptavidin.

157. (Previously Presented) The method according to claim 156, further comprising the step of binding the selected phage to an inorganic nanoparticle having streptavidin units.

158. (Previously Presented) The method according to claim 156, further comprising the step of binding the selected phage to a fluorescent compound having streptavidin units.

159. (Previously Presented) The method according to claim 156, further comprising the step of binding the selected phage to a fluorescent protein having streptavidin units.